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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,112	01/28/2002	Hiroshi Hamada	HAMA3003/EM	2623

23364 7590 07/02/2003

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ALEXANDRIA, VA 22314

EXAMINER
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AGUIRRECHEA, JAYDI A

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/056,112

### Applicant(s)

HAMADA ET AL.

### Examiner

Jaydi A. Aguirrechea

### Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) 3-6 and 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 2 and 4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear to the examiner what the applicants mean by "metal film occupation ratio". For purpose of examination it is assumed that the occupation ratio term refers to the surface area covered by the metal film.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai (US 5784340) in view of Bost (US 4078160).

Kanai teaches a piezoelectric vibrator (Figure 2), comprising a vibration plate (21) having a primary surface; and a piezoelectric device (2) attached on the primary surface of the vibration plate, wherein the piezoelectric device includes a piezoelectric film (2) and two electrodes (23,

Column 4, lines 10-20) formed on two sides of the piezoelectric film, wherein one of the two sides of the piezoelectric film on which the vibration plate is not attached is a primary side and one electrode of two electrodes formed on the primary side is a primary electrode (Column 4, lines 10-20).

However, it fails to disclose the primary electrode is substantially uniformly coated on the primary side and made of a continuous mesh metal film. Bost teach the electrode coated with a continuous metal film (Column 2, line 60- Column 3, line 10) for the purpose of coupling a first and a second elements.

It would have been obvious to one skilled in the art at the time the invention was made to use the electrode coating disclosed by Bost on the piezoelectric vibrator disclosed by Kanai for the purpose of coupling two elements.

5. With regards to claim 2, Bost discloses a metal film occupation ratio of about 100% of the surface of the electrode. (Figure1; Column2, lines 45-53).

6. With regards to claim 11, Kanai discloses the invention to be used in a cordless phone. (Column 1, lines 45-50)

7. With regards to claim 12, Kanai discloses the frame having an inner portion for supporting the circumference of the piezoelectric vibrator. (Figure 1)

8. With regards to claim 13, Bost discloses the method of forming the mesh metal film (Column 3, line 50- column 4 line 3).

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai in view of Bost as applied to claim 1 above, and further in view of Issartel (US 5245734).

The combination of Kanai and Bost disclose the claimed invention. However, it fails to disclose multiple electrodes alternately stacked and cofired.

Issartel teaches multiple electrodes alternately stacked in a multilayer piezoactuator.

It would have been obvious to one skilled in the art at the time the invention was made to use the multilayer electrode design disclosed by Issartel on the piezoelectric device disclosed by the combination of Kanai and Bost for the purpose of reinforcing the structure.

***Allowable Subject Matter***

10. Claims 3-6 and 8-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach, disclose, or suggest, either alone or in combination contact electrodes formed along the inside of the circumference of a primary electrode in a piezoelectric device (claim 3) and the ratios of the thickness of the electrode to a thickness of the piezoelectric film.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 703-305-2277. The examiner can normally be reached on M-Th 9-7.

Application/Control Number: 10/056,112  
Art Unit: 2834

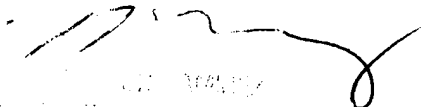
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JAA

June 26, 2003

  
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